

Response to USEPA Comments (September 3, 2019)
Diamond Alkali OU4, Evaluation of the CPG Current Conditions Addendum to the QAPP – Fish and Crab Tissue Collection for Chemical Analysis, submitted to USEPA August 2019

No.	Section	General or Specific	Page No.	USEPA Comment	Response
1	Introduction	Specific	1	DQO 1 lists the target species as “American eel, bass, blue crab, catfish, and white perch”. Revise this list to include forage fish (sunfish).	Text has been revised to match Worksheet 10 (also added carp, which were inadvertently omitted from this list).
2	Introduction	Specific	1	DQO 1, RM 15 to Dundee Dam bullet, last sentence states that if fish and crab samples are insufficient to achieve target numbers after (25 composites over 2 years), that “DQO 1 will be considered unachievable and will not be exercised.” Delete the quoted text and replace with, “DQO 3 will be used to determine the future data analysis and collection plan.”	Text has been revised.
3	Introduction	Specific	2	Third full paragraph, second sentence, revise to say, “These COCs include 2,3,7,8- <i>substituted</i> polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (PCDDs/PCDFs) (and homologues)” italic added for emphasis.	Text has been revised.
4	Introduction	Specific	2	Fourth full paragraph, first sentence, among other typos “reminder”, should be “remainder”	Typos have been corrected.
5	Introduction	Specific	3	First paragraph should reference where in the document the fish aging methods are described further.	Reference has been added.
6	QAPP Worksheet 3	Specific	8	Update William Sy’s phone number to (732) 321-6648.	Phone number has been updated.
7	QAPP Worksheet 9	Specific	21	Last bullet on page, revise to state, “PCDDs/PCDFs and homologs, PCB congeners and homologs”	Text has been revised.
8	QAPP Worksheet 10	Specific	22	DQO 1, RM 15 to Dundee Dam bullet, last sentence states that if fish and crab samples are insufficient to achieve target numbers after (25 composites over 2 years), that “DQO 1 will be considered unachievable and will not be exercised.” Delete the quoted text and replace with, “DQO 3 will be used to determine the future data analysis and collection plan.”	Text has been revised.
9	QAPP Worksheet 10	Specific	24	Possible classes of contaminants: revise to say PCDDs/PCDFs and homologs, and PCB congeners.	Text has been revised.
10	QAPP Worksheet 11	General	-	Worksheet 11, and Appendix O, for preparing composites of catfish, bass, and sunfish, if a sufficient number of individuals is collected, the composites should each be single-species. In instances where insufficient fish are collected to make single-species composites, multiple species can be used. Explanations should be included on the field data sheets as to the rationale for each catfish/bass/sunfish composite. Revise Worksheet 11 and all locations in Appendix O that discuss composites.	Text has been revised.
11	QAPP Worksheet 11	Specific	28	Who will use the data? Add NJDEP Division of Science and Research, as they will evaluate all reported contaminant levels relative to, and in support of, current State fish consumption advisories.	Text has been added.

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12	QAPP Worksheet 11	Specific	34	Data reporting – Although assumed to be done, the worksheet should specify recording the GPS information for each sample collection location.	Correct; GPS coordinates have been added to list.
13	QAPP Worksheet 11	Specific	34	Data reporting – the worksheet should mention preparation of the compositing plan memorandum (described in Attachment O) summarizing the fish collection outcome (numbers of individuals per species, and their sizes, weights, gender, and abundance per collection location and river mile, etc.) to be generated as a basis for determining the sample composite plan prior to implementing the analytical program.	Text has been added to Worksheet 11.
14	QAPP Worksheet 11	Specific	34	Accommodations for supplying sufficient tissue samples to EPA for split sampling purposes should be described.	Text has been added to footnote regarding USEPA split samples in Worksheet 11.
15	QAPP Worksheet 11	Specific	34	Data archiving? De maximis Data Management Solutions, Inc. is listed as the entity that will provide the MEDD to EPA. It is EPA's understanding that Windward Environmental LLC will be generating the MEDD. Confirm and revise as needed.	Text has been revised.
16	QAPP Worksheet 11	Specific	36	Table 11-2, RM 16 to Dundee Dam; because CPG anticipates catch rates to be low in the upper reach of the river, the number of trap sets in this reach should be at least doubled in order to collect the desired target numbers.	Text has been revised to indicate that two sets of each type of trap will be deployed above RM 16.
17	QAPP Worksheet 11	Specific	36	Table 11-2; the table should be revised to include the types of traps (e.g., commercial eel trap, L"xH"xW"), trotlines (e.g., length and hook numbers), gillnets and seine nets (L'xH' and mesh sizes). Additionally, during discussions between EPA and CPG, hook-and-line fishing was discussed as an option, and it should be included in the table. It is appropriate for such ambush predators as bass that may be difficult to collect using other methods.	Details regarding fishing gear have been added to Table 11-2. Based on past collection efforts, hook-and-line fishing is not an effective method for collecting the target species. Thus, no hook-and-line collection is planned.
18	QAPP Worksheet 12	General	-	For the worksheets related to PCB congeners and dioxin, the QC sample descriptions need to be consistent with the laboratory SOPs. There was no explanation for some QC sample descriptors such as batch control spike, spiked solvent blank and the laboratory SOPs did not use the same terminology. Revise the worksheet to reconcile.	QC sample descriptions have been updated to be consistent with laboratory SOPs.
19	QAPP Worksheet 12	General	-	For consistency, use the SOP numbering reference as provided in Worksheet #23. For the PAH analysis, reference was made to SOP 47 for both Pre-Extraction internal standards and LCS and should be revised. In addition, verify the reference to Table 1 of the SOP for the LCS QC acceptance criteria. Table 1 of the SOP provides the quantitation limits, not the LCS acceptance criteria.	Reference to SOP 47 has been removed from Worksheet 28 (was not originally included in Worksheet 12). The LCS acceptance criteria have been added (50–150%) to Worksheets 12 and 28 rather than referring to SOP 47.

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20	QAPP Worksheet 12 PCDDs/PCDFs	Specific	38	Batch control spike (LCS) recovery limits do not match those listed on Table 6 in SOP T3. Confirm and revise as needed throughout.	The LCS recovery limits have been revised in Worksheets 12 and 28.
21	QAPP Worksheet 12 PCB Congeners	Specific	39	Batch control spike (LCS) recovery limits do not match those listed on Table 5 in SOP T2. Confirm and revise as needed throughout.	LCS recovery limits have been revised.
22	QAPP Worksheet 12 PCB Congeners	Specific	39	Extraction Surrogate recovery range is shown on worksheet as a range from 15% to 150%. This does not match the range listed on Table 6 in SOP T2 (25%-150%). Confirm and revise as needed throughout.	Recovery limits have been revised.
23	QAPP Worksheet 12 Total Mercury	Specific	43	CRM recovery shown on worksheet is 75% - 125%, it does not match Table 3 of SOP T-14 for the blank spike if no SRM is run. If an SRM is provided the MPC should reference the SRM certification sheet. Confirm and revise as needed throughout.	Table 3 of SOP T-14 provides recovery limits for CRM of 75–125% (the blank spike recovery limits do not apply because a CRM will be required). Text has been added to indicate CRM manufacturer limits may also be used (whichever is greater). This was done because the uncertainty limits for the CRM may be narrower (e.g., 108%) than achievable based on the laboratory SOP and consideration of analytical variability.
24	QAPP Worksheet 12 Metals (ICP/MS)	Specific	45	LCS recovery listed in SOP T-10 Table 6 does not contain recovery limits for tissue. Confirm the recovery limits the laboratory can achieve and revise as needed throughout.	Tissue LCS recovery limits were provided in Worksheet 12 but are not part of SOP T-10. Values were confirmed by the laboratory via email on 8/29/19. No revisions were required.
25	QAPP Worksheet 12 Organochlorine Pesticides	Specific	46	LCS recovery limits do not match those listed on Table 5 in SOP T7. Confirm and revise as needed throughout.	LCS recovery limits have been revised.
26	QAPP Worksheet 12 Organochlorine Pesticides	Specific	46	Extraction Surrogate recovery range is shown on worksheet as a range from 50% to 150%. This does not match the range listed on Table 5 in SOP T-7. Confirm and revise as needed throughout.	Recovery limits have been revised in Worksheets 12 and 28.
27	QAPP Worksheet 12 PAHs	Specific	47	Internal standard recovery limits from SOP T-4 Section 14.4 is listed as 50% - 150%. It does not appear to be compound specific as indicated on the worksheet. Confirm and revise as needed throughout.	Recovery limits have been revised to 50–150% in Worksheets 12 and 28.

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28	QAPP Worksheet 14	Specific	49	Analysis Tasks, second sentence, along with weight/length, include gross external exam for abnormalities (e.g., lesions, neoplasms, missing/deformed fins/legs, parasites)	Gross external abnormalities (i.e., missing/deformed fins or legs) will be noted on field forms. Full health assessments will not be conducted.
29	QAPP Worksheet 14	Specific	49	Analysis Tasks, third sentence, clarify when fin rays/spines/scales and otoliths will be removed. Will otoliths be removed in the field, or in the analytical laboratory during the filleting process?	Text has been revised.
30	QAPP Worksheet 15 PCBs by Congener	Specific	starting pg 55	PCB Congener limits could not be confirmed in SOP T-2. Confirm and revised as needed throughout.	Detection limits in Worksheet 15 were provided by the laboratory and are not incorporated into SOP T-2. Supporting information can be provided as requested.
31	QAPP Worksheet 15 Metals (ICP/MS)	Specific	66	The achievable laboratory limits on the worksheet could not be confirmed. SOP T-10 Table 2 does not contain limits for tissue samples. A detection limit of 0.020mg/kg is given for soil/solid. Confirm and revise as needed throughout.	Achievable laboratory tissue limits were provided in Worksheet 15 but are not part of SOP T-10. Values were confirmed by the laboratory via email on 8/29/19. No revisions were required.
32	QAPP Worksheet 17	Specific	71-74	Sampling design and rationale; hook-and-line fishing should be included in the discussion as an optional method.	Based on past collection efforts, hook-and-line fishing is not an effective method for collecting our target species. Thus, no hook-and-line collection is planned.
				Include descriptions of gillnets (length and height, mesh sizes, mesh material, etc.), eel/minnow traps and crab traps (commercial or recreational, size, material, etc.). Include the types of bait will be used for each species. Include the lengths of trotlines and number of hooks. Include the description of seines (length and height, mesh size, mesh material, etc.).	This worksheet has been revised to provide additional details, and to reference Table 11-2 for specific gear information.
				Because the traps will be baited, and fish/crabs will be allowed to eat the bait, samples of the bait should be submitted for COPEC analyses. Attachment J Fish Collection SOP states that all bait will be in bait bags to prevent collected biota from consuming the bait. Bait bags and perforated containers still allow bits of bait to escape, particularly when they are bitten and shaken by eels, and crabs typically only eat small particles.	Per email communication with USEPA (8/29/19), bait will not be analyzed, but instead will be noted as a possible uncertainty in the final data report.

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33	QAPP Worksheet 18	Specific	76	Fishing Method column; clarify what “oriented on the river bottom” means. Is it oriented so the openings on the traps are oriented upstream and downstream? Does it mean that trotlines will be oriented parallel with stream flow?	Text has been revised.
34	QAPP Worksheet 21	General	-	The worksheet lists two (2) SOPs that were revised. However, there are other applicable sampling SOPs that were referenced to this worksheet. It is not clear to the user where to locate the other SOPs. All applicable project sampling SOPs should be listed with the worksheet.	Worksheet 21 has been updated to include all SOPs.
35	QAPP Worksheet 22	General	-	The worksheet lists two (2) SOPs that were revised. However, there are other applicable sampling SOPs that were referenced to this worksheet. It is not clear to the user where to locate the other SOPs. Recommend that all applicable project sampling SOPs be listed with the worksheet.	Worksheet 22 has been deleted because, upon further review, no changes were needed relative to the 2009 QAPP and subsequent addendums.
36	QAPP Worksheet 28	General	-	For the worksheets related to PCB congeners and dioxin, the QC sample descriptions need to be consistent with the laboratory SOPs. There was no explanation for some QC sample descriptors such as batch control spike, spiked solvent blank and the laboratory SOPs did not use the same terminology. Revise to reconcile.	QC sample descriptions have been updated to be consistent with laboratory SOPs
37	QAPP Worksheet 28	General	-	For consistency, use the SOP numbering reference as provided in Worksheet #23. For the PAH analysis, reference was made to SOP 47 for both Pre-Extraction internal standards and LCS and should be revised. In addition, verify the reference to Table 1 of the SOP for the LCS QC acceptance criteria. Table 1 of the SOP provides the quantitation limits, not the LCS acceptance criteria.	The LCS criteria have been revised to 50–150%. References to laboratory SOP 47 have been removed.
38	QAPP Worksheet 30	General	-	For the organochlorine pesticides, SOP T4 was referenced in addition to T7. SOP T4 is listed as the SOP for PAH preparation and analysis. Clarify whether the method (SOP T7) also utilizes part of SOP T4.	The SOP reference for organochlorine has been revised to include only SOP T7.
39	QAPP Worksheet 30	General	-	For fish age determination, SOPs T30 and T31 indicated on this worksheet were not listed in the attachment listing the analytical SOPs. In addition, it was not clear why the fish aging laboratory was shown as “to be determined” In the organizational chart and distribution list, Normandeau Associates, Inc. was listed as the Age Analysis Laboratory. Revise to clarify.	Table has been updated to reflect selection of Normandeau Associates as fish aging laboratory.
40	QAPP Worksheet 36	General	-	QAPP Worksheet 28 should also be used as part of the validation criteria.	Validation criteria have been updated to include Worksheet 28.
41	QAPP Worksheet 36	General	-	Note that the referenced validation SOP for metals is now separated into SOP 2a and SOP 2b for validating data generated using ICP-AES and ICP-MS. These can be found at https://www.epa.gov/quality/region-2-quality-assurance-guidance-and-standard-operating-procedures .	SOP reference for ICP-MS validation criteria has been revised.

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42	QAPP Worksheet 36	General	-	Instead of levels, use the terminology provided in the EPA document <i>Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use</i> (EPA 540-R-08-005) to describe the validation stages that will be performed. This document can be found at the following webpage: https://www.epa.gov/clp/superfund-clp-analytical-services-guidance-documents .	Validation types have been changed from level to stage based on the guidance document terminology.
43	Fish/Crab Collection SOP	Specific	3	Bullet A, first paragraph states that because fish/crab baits will be placed in bait bags, no bait samples will be analyzed for COPECs. Bait bags and perforated containers still allow bits of bait to escape, particularly when they are bitten and shaken by eels, and crabs typically only eat small particles. Bait should be analyzed for COPECs.	Per email communication with USEPA (8/29/19), bait will not be analyzed, but instead will be noted as a possible uncertainty in the final data report.
44	Fish/Crab Collection SOP	Specific	3	Bullet A, second paragraph gives an inadequate description of the eel/minnow trap. Recreational minnow traps (widely available cylindrical traps) are not well designed for collecting laterally compressed fish with a large dorso-ventral profile (e.g., sunfish) unless the openings are modified. Recreational minnow traps are also not well designed for collecting eels, even when the optional extension section is utilized. Cylindrical traps tend to roll around in the current and with the tide. Commercial eel traps are superior for eel collection and retention. During a call with EPA, CPG mentioned that the fish collection contractor was purchasing commercial eel traps. Add the traps and an adequate description to the SOP.	Details regarding minnow and eel traps have been added. Commercial eel traps have been purchased and will be used for targeting eel. Two types of minnow traps will be used (both flat-bottom semi-oval traps and standard cylindrical minnow traps). Note that cylindrical minnow traps were found to be successful during past efforts.
45	Fish/Crab Collection SOP	Specific	3	Bullet A, second paragraph says that if eel/minnow traps can't be deployed during the day, they will be deployed in late afternoon and retrieved the next day. That statement implies that collection will be done during the day. Because eels are nocturnal, eel traps should always be allowed to soak overnight for maximum efficiency. Additionally, the biota collection QAPP states that traps and trotlines will be left to soak overnight. Revise the SOP to clarify that traps will soak overnight.	Text has been revised.
46	Fish/Crab Collection SOP	Specific	5	Bullet 7 at the top of the page states, "Hooks will be left in during field collection and noted for the laboratory where samples will be prepared." Because bullet 5 above this says that fish will be unhooked, bullet 7 is unclear. Revise the bullet to clarify.	Text has been revised.
47	Fish/Crab Collection SOP	Specific	7	Section 7, first paragraph, second sentence states that damaged or compromised will not be retained. Revise the section to include disposal of damaged/dead target and non-target fish.	Text has been revised.
48	Fish/Crab Collection SOP	Specific	8	Section 8, bullet 8, revise to state that the proper location for collecting scales for aging is different for different species, and that aging scales will only be collected from the proper species-specific location.	Text has been revised.

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49	Fish/Crab Processing SOP	General	-	Worksheet 11, and Appendix O, for preparing composites of catfish, bass, and sunfish, if a sufficient number of individuals is collected, the composites should each be single-species. In instances where insufficient fish are collected to make single-species composites, multiple species can be used. Explanations should be included on the field data sheets as to the rationale for each catfish/bass/sunfish composite. Revise Worksheet 11 and all locations in Appendix O that discuss composites.	Text has been revised here and in Worksheet 11.
50	Fish/Crab Processing SOP	General	-	Accommodations for supplying sufficient tissue samples to EPA for split sampling purposes should be described.	Text regarding the process for supplying USEPA with split sample tissue has been added.
51	Fish/Crab Processing SOP	Specific	5	First two paragraphs and three bullets, the sample numbering description is not an exact match for the sample numbering description in the QAPP Worksheet 27. Revise the worksheet and/or the SOP to specify the correct numbering scheme.	Text has been revised to match Worksheet 27.
52	Laboratory Certification	General	NA	The laboratory certifications referenced on the table need to be provided for review.	Laboratory certifications will be provided as part of Attachment U with the revised QAPP.